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GENERAL NOTES.

In number 100 of these *Publications* there was printed a table showing a comparison between the weather at the International Latitude Stations of Mizusawa, Japan, and Ukiah, California. The Mizusawa meteorological report for 1904 came recently, and a comparison similar to that published in the number mentioned above is given in the table below:—

	Mizusawa.	Ukiah.
Precipitation (1904)	54.84 inches	56.02 inches
Maximum	12.58 (July)	17.29 (Feb.)
Minimum	1.39 (Feb.)	0.02 (Aug.)
Number of days on which rain fell	211	98
Number of days on which no rain fell	155	268
Maximum interval with rain every day	Oct. 26–Nov. 11 (17 days)	Mar. 5–Mar. 14 (10 days)
Maximum interval without rain	Aug. 14–Aug. 29 (16 days)	July 14–Aug. 23 (40 days)
Number of clear days	12	201
Number of cloudy days	170	96
Maximum temperature	93° F. (Aug.)	108° F. (Aug. Sep.)
Minimum temperature	-4° F. (Jan.)	25° F. (Jan. Mar.)

Besides the meteorological data, the report contains two seismological tables, one containing the records of ninety-nine earthquakes, and the other the records of sixty-seven pulsatory oscillations, all experienced at Mizusawa in 1904.

Names for Satellites.—The August number of *The Observatory* contains a communication from CHAS. T. WHITMELL which reads as follows:—

" Whilst the members of the ever-increasing crowd of minor planets are promptly supplied with names, we have, as yet, no name for the satellite of *Neptune,* discovered nearly sixty years ago; and for the satellite of *Jupiter,* discovered in 1892, we have only a number. Now that fresh members have been added to the families of *Jupiter* and *Saturn,* the lack of distinctive names, such as those so happily given to the satellites of *Mars,* is a decided inconvenience.

" Should not the discoverers of these recently found moons be asked to name them? Their right to do so will not be disputed. In the case of *Neptune's* moon, unfortunately we cannot appeal to Mr. LASSELL; but if this satellite may not bear his name, would it not be well for leading astronomers (at their next conference) to find some suitable title?"

The following notes have been taken from recent numbers of *Science*:—

At the recent commencement of Amherst College the degree of Master of Arts was conferred by President HARRIS on Mr. LUNDIN. He said: "CARL AXEL ROBERT LUNDIN, scientific expert in cutting and fashioning glasses of great telescopes. He has done important work on the large objectives of Russia, of the Lick and Yerkes observatories, and lately on the 18-inch objective of the Amherst College Observatory, which is wholly his work. In 1854 Ahmerst conferred the degree of master of arts on ALVAN CLARK, who had built our first telescope. The same degree, for a similar service, is conferred on his successor, who has kept pace with the progress of astronomical science."

The city of Hamburg will re-establish the old astronomical observatory at Bergedorf. The observatory has been presented with fifty thousand marks for the purchase of a photographic telescope.

The Carnegie Institution sent Professors F. ELSTER and H. GEITEL and Herr F. HARMS to Palma to make observations of the electric conditions of the atmosphere during the recent solar eclipse. *Nature* states that by means of a self-registering electrometer, the variation of atmospheric electricity was photographically recorded, and a series of points of the same curve was taken simultaneously by eye-readings. The ionization of the air was studied, and exact measurements of the intensity of the solar radiation within the short wave-lengths were carried out. The observations, like all others in Spain, suffered from bad weather conditions. On the day of the eclipse rain fell during the morning; consequently it cannot be considered as undisturbed as regards atmospheric electricity. The measurements of the solar radiation were possible in a continuous series only from the first contact to the end of totality; the decrease of illumination, therefore, was determined in a satisfactory manner and without any gaps. On the other hand, clouds prevented any reading being taken during the increase of light after totality.

Darwin's Address.—Professor G. H. DARWIN'S presidential address, on evolution, delivered before the recent meeting of the British Association for the Advancement of Science held in South Africa, is printed in full in *Science* for August 25th and September 1st. It is a masterly address, and should be read by every one interested in astronomy.

Doctor's Degrees.—In *Science* for September 15th there appeared an article entitled "Doctorates Conferred by American Universities." During the last eight years 2,037 doctorates have been conferred, and of these 984 were taken in the sciences. Astronomy stands ninth among the twenty-two sciences enumerated, with twenty-seven degrees to its credit. Three doctorates in astronomy were conferred during the last academic year as follows: "By Princeton University, on WALTER MANN MITCHELL, "Researches in the Sun-Spot Spectrum, Region F-A"; by the University of Wisconsin, on STEPHEN MARSHALL HADLEY, "Relative Masses of Binary Stars"; by the University of California, on RALPH HAMILTON CURTISS, (I) "A Method of Measurement and Reduction of Spectrograms for the Determination of Radial Velocities," (II) "Application to the Study of the Variable Star *W Sagittarii.*"

Latitude Stations.—In the last number of these *Publications* there appeared a note on the variation of latitude in which mention was made of two new stations about to be established in the southern hemisphere. Since that note was written additional data have come to hand which may not be entirely without interest to readers of these *Publications.* The exact latitude of the stations is —31° 55′ 15″, and the longitudes are —115° 54′.5 and +63° 42′. The Australian station is situated near Bayswater, between three and four miles northeast of Perth, the principal city of Western Australia. Perth has about forty thousand inhabitants. The altitude of the station is about one hundred feet above sea-level. The annual range of temperatures is between freezing and 110° Fahrenheit, and the yearly rainfall is about thirty-four inches. Dr. CURT HESSEN, formerly second assistant in the Berlin Observatory, is to be observer at this station, and the instrument is a zenith-telescope by WANSCHAFF of 2.7 inches aperture and 34 inches focal length. This is the instrument used by MARCUSE in the observations made at Honolulu in 1891 and 1892.

The station in the Argentine Republic is located near the small village of Oncativo, which is on the Central Argentine Railway about forty-three miles from Cordoba. The altitude of the station is about 920 feet. The annual range of temperature is between + 20° and + 105° Fahrenheit. The yearly rainfall is about 27.5 inches. Dr. LUIGI CARNERA, for two years observer at the latitude station at Carloforte, is to have charge of this station. The instrument is a zenith-telescope by WANSCHAFF of 4.3 inches aperture and 51 inches focal length. This instrument is of the same size as those at Gaithersburg and Ukiah.

With the establishment of the new zenith-telescope at the Poulkova Observatory, mention of which was made in the last number of these *Publications,* regular observations for the variation of latitude are now being made at eleven different stations situated in five different latitudes, as follows: Poulkova, in latitude + 59° 46′; Leiden, + 52° 9′; Mizusawa, Tschardjui, Carloforte, Gaithersburg, Cincinnati, and Ukiah, + 39° 8′; Tokio + 35° 39′; Bayswater and Oncativo, — 31° 55′.

S. D. T.

The Figure of the Sun.—The *Astrophysical Journal* for September contains a number of interesting articles, one of which, "The Figure of the Sun," by CHARLES LANE POOR, is of special and perhaps popular interest. Between 1860 and 1875 LEWIS M. RUTHERFURD made a large number of photographs of the Sun, and these negatives are now in the possession of the Observatory of Columbia University. Dr. POOR has selected from these all of those which are of good definition and have upon them marks and data sufficient for their orientation. Most of the plates did not have orientation marks upon them, and only twenty-two were found suitable for measurement. The polar and equatorial diameters of the Sun's image were determined from these plates by means of a measuring-engine, and when the results were arranged chronologically the interesting fact developed that the number which expresses the ratio between the polar and equatorial diameters is not constant, and indeed it was found that the equatorial diameter was sometimes greater and at other times less than the polar diameter. In order to test the result Dr. POOR made an investigation of a large number of heliometer measures of the Sun's diameter made in connection with the transits of *Venus* in 1874 and 1882. This investigation confirmed the results obtained from RUTHERFURD's plates. To still further test the result Dr. POOR obtained a number of negatives of the Sun taken at Goodsell Observatory in 1893 and 1894. The measurement of these plates gave further confirmation of the result first obtained.

Dr. POOR's next step was to plot these results along with the curve of sun-spot frequency, and the interesting fact was developed that the change in the ratio between the equatorial and polar diameters has a period which apparently coincides with the sun-spot period. The equatorial diameter increased with respect to the polar diameter at the same time that the number of spots was increasing, and *vice versa.*

The article is closed with the following paragraphs: "The present investigation would seem to show, therefore, that the ratio between the polar and equatorial radii of the Sun is variable, and that the period of this variability is the same as the sun-spot period. The Sun appears to be a vibrating body whose equatorial diameter, on the average, slightly exceeds the polar diameter. At times, however, the polar diameter becomes equal to and even greater than the equatorial—the Sun thus passing from an oblate to a prolate spheroid.

"In this variable figure of the Sun may lie the explanation of the anomalies in the motions of *Mercury, Venus,* and *Mars.*"

S. D. T.

Eclipse from a Balloon.—Mr. PERCIVAL SPENCER gives the following account of the balloon ascent which he made with Mr. F. H. BUTLER from Wandsworth, near London, with the object of viewing the eclipse from the clouds:—

"At half-past 12 the ascent commenced, and at 12:40 through the upper clouds we saw the Sun, a crescent. We were then two thousand feet high, and still rising. Soon more clouds intervened, and in another five minutes we had reached three thousand feet, and the Sun was quite obscured by the upper clouds. The balloon was now reaching its equilibrium, and at ten minutes to 1 a hundredweight of sand was discharged, which had the effect of so lightening it that a continual and regular rise ensued. At five minutes to 1 we were forty-five hundred feet high, saw the eclipse well, and took our first photographs of it. From 1 o'clock to twenty minutes past we had a continual and uninterrupted view, and proceeded to take photographs at regular intervals, until at 1:30 we had reached six thousand feet high, and now so much cloud had been left behind that we found the light so strong that the view could not be obtained with our obscured glasses. The Sun's rays were too powerful. We overcame this by using two glasses, and thus we not only continued to view the increasing rays, but continued to take photographs, with our fumed glasses in front of the lens. . . . The eclipse finished at 2:04, and one minute later the balloon descended through the clouds. As we passed the clouds, snowflakes descended round us; at 2:10 we were crossing the coast-line, and at a quarter past 2, having dropped to three thousand feet, we were out at sea. At 2:25 the coast was disappearing. By means of the statoscope—a delicate instrument for showing the rise and fall—we endeavored to maintain our equilibrium at about three thousand feet."

The aeronauts landed at Caen, having traveled one hundred and sixty miles in seven and a half hours.—*Extract from the Times.*

Solar Eclipse.—M. TRÉPIED, director of the Algiers Observatory, reported as follows concerning the recent eclipse:—

" The observation was favored by splendid weather, and the sky was very clear. The contact of the Sun and Moon occurred practically at the moment determined by the calculations made in different countries.

" As soon as the light began to fail *Mercury, Regulus,* and *Venus* were seen shining in a dark sky. The solar corona was very brilliant. It presented, on the whole, the features which had been expected on account of the period of solar activity, i. e. the corona was not very extensive, but was distributed uniformly round the Sun. Brilliant red protuberances of hydrogen were perceived on the edge of the Sun at the beginning and at the end of the period of totality. BAILEY'S beads were also observed.

"The Algiers mission took thirty-one photographs of the eclipse before, during, and after the period of totality. It photographed the spectral corona with a special apparatus. The temperature fell five degrees centigrade, from 33 to 28 (91.4 to 82.4 Fahrenheit). The wind was rather strong. The so-called eclipse wind rose at the beginning of totality and of obscurity. At the same time we saw on the ground moving shadow-stripes, a phenomenon which has not yet been explained."—*From London Standard.*